6.0 Funding Strategy

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This chapter describes a general funding approach for the ITS/CVO program.

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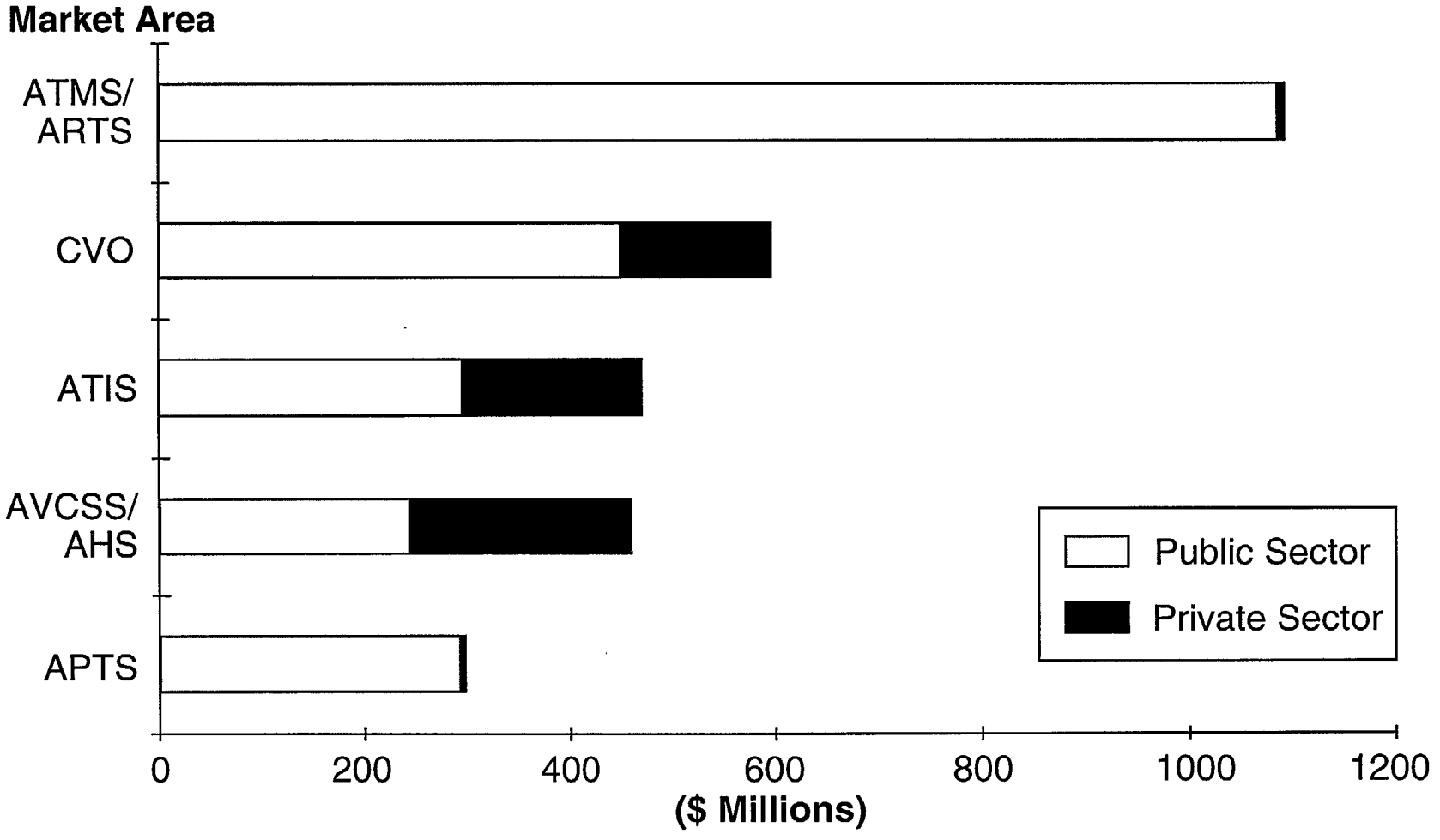
- An assessment of the program's historical funding levels;
- Estimates of future funding requirements;
- The identification of potential Federal, state, local, and private sector funding sources; and
- Strategies for the devolution of funding responsibilities from the Federal government to the states and to the private sector.

ITS Expenditures, 1992 to 1995



Source: U.S. DOT, Joint Program Office for ITS.

Historical Expenditures

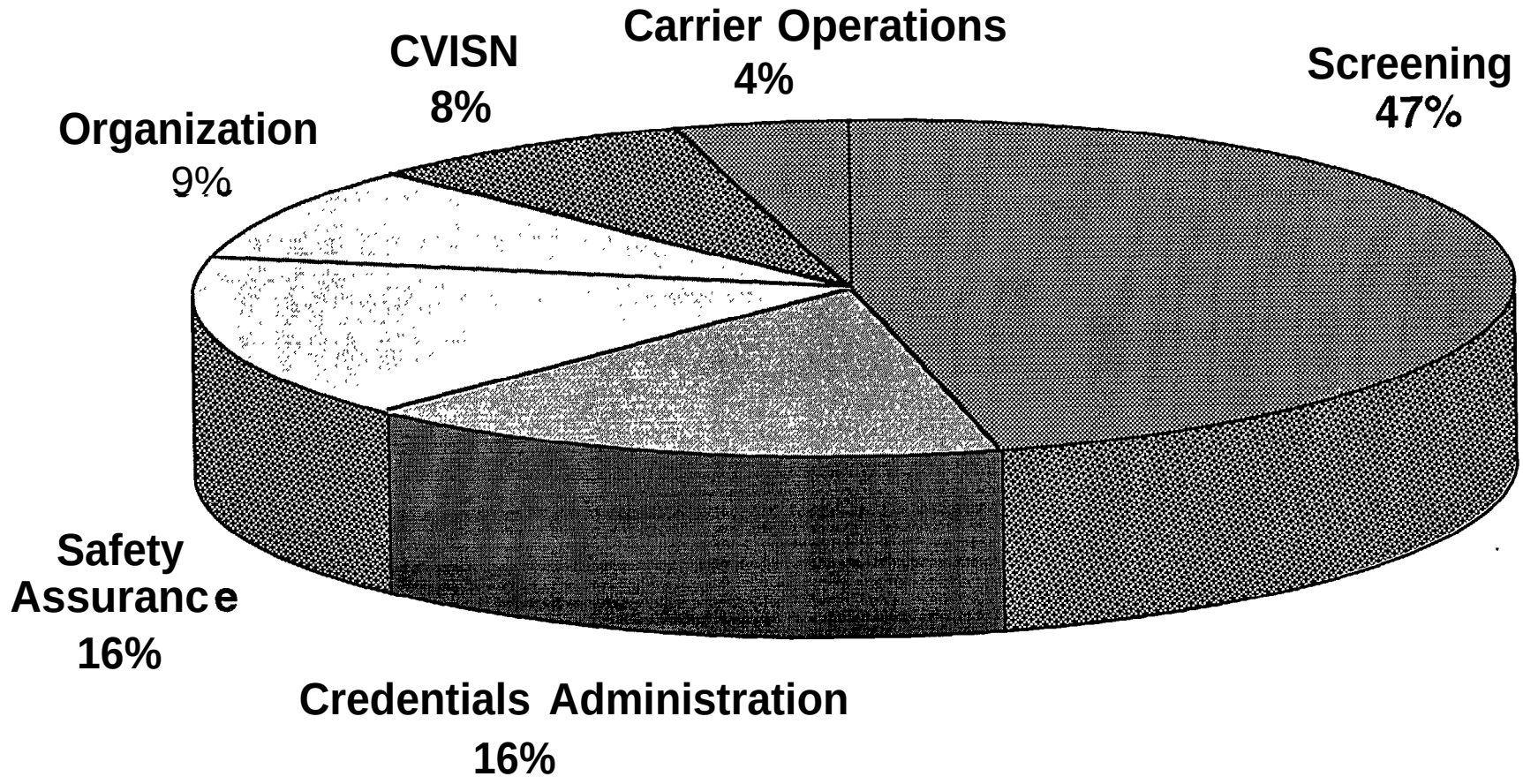
Approximately $600 million was expended on ITS/CVO development and deployment from 1992 to 1995.

The U.S. DOT's Joint Program Office for ITS has estimated that investment in ITS products and services totaled $2.9 billion from 1992 to 1995.[1] The largest amount, over $1 billion, was spent on Advanced Traffic Management Systems (ATMS) and Advanced Rural Transportation Systems (ARTS). This was followed by CVO, which represented 20 percent of the total ITS investment over the period, or $600 million; Advanced Traveler Information Systems (ATIS); Advanced Vehicle Control and Safety Systems (AVCSS) and Automated Highway Systems (AHS); and Advanced Public Transportation Systems (APTS).

Federal and state governments accounted for about three-quarters of the ITS/CVO spending during the four-year period, or $451 million. The remaining $147 million in ITS/CVO spending was provided by the private sector. The private sector's role in ITS/CVO deployment to date has been substantially larger than in other ITS market areas.

1Funding levels were derived from *The Intelligent Vehicle-Highway Systems Program in the Unifed States,* produced by the U.S. DOT's Joint Program Office for Intelligent Transportation Systems in 1995. This document provided the most recent funding data for the Federal program for fiscal years 1992 through 1995.

Estimated ITS/CVO Spending by Program Area, 7991 to 7998



Source: Cambridge Systematics, inc. estimates.

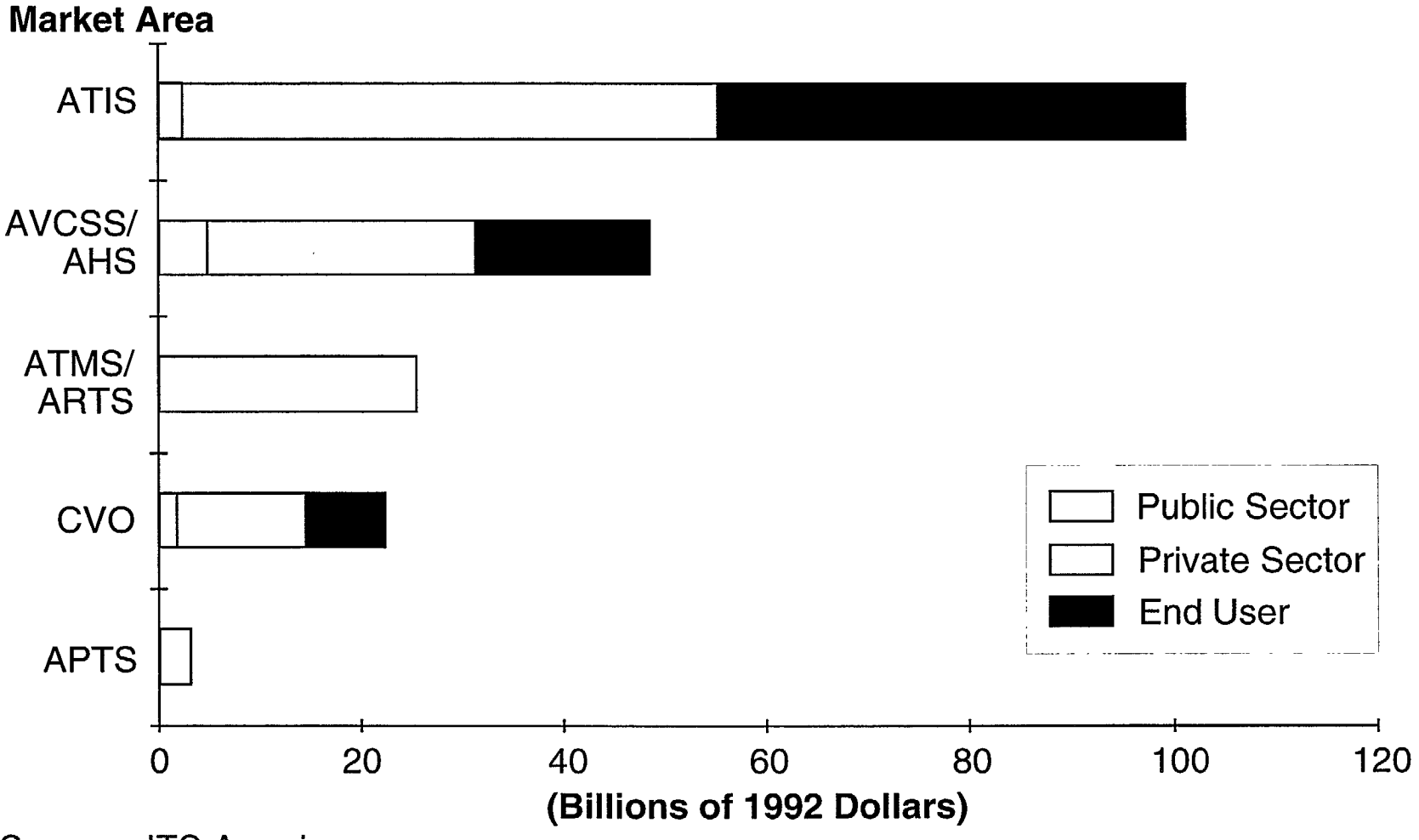
Public Sector Funding

Public sector ITS/CVO investment initially focused on automated clearance. However, the emphasis is shifting toward safety assurance and the technical architecture.

A detailed analysis of ITS/CVO funding is difficult to develop due to the large number of agencies and projects involved. However, broad trends in public sector ITS/CVO funding can be identified by assessing current and planned funding for the major projects identified in Chapter 3.0:

- Commercial vehicle screening projects account for more than 45 percent of public sector ITS/CVO funding to date. This spending includes three large domestic operational tests – HELP/Crescent, Advantage I-75 MACS, and Oregon Green Light – as well as the four international border clearance tests that are underway.
- Credentials administration projects account for about 16 percent of public sector ITS/CVO expenditures. The major initiatives in this area include the Commercial Vehicle Information System (CVIS), the Automated Mileage and Stateline Crossing Operational Test (AMASCOT), and the one-stop shopping operational tests.
- Safety assurance programs account for about 16 percent of public sector ITS/CVO expenditures. The major initiatives in this area include development of the SAFER system and deployment of computers and software through the 100/200 MCSAP Site Project. Research and testing on out-of-service verification technologies, brake testing devices, and driver fatigue also are priorities.
- Development of the technical and organizational framework for ITS/CVO deployment through the CVISN and mainstreaming initiatives represents about 17 percent of public sector ITS/CVO spending.
- Carrier operations projects are a lower priority for public sector ITS/CVO spending, with the exception of hazardous materials incident response systems.

Projected ITS Expenditures, 1997 to 2011



Source: ITS America.

Future Funding Needs

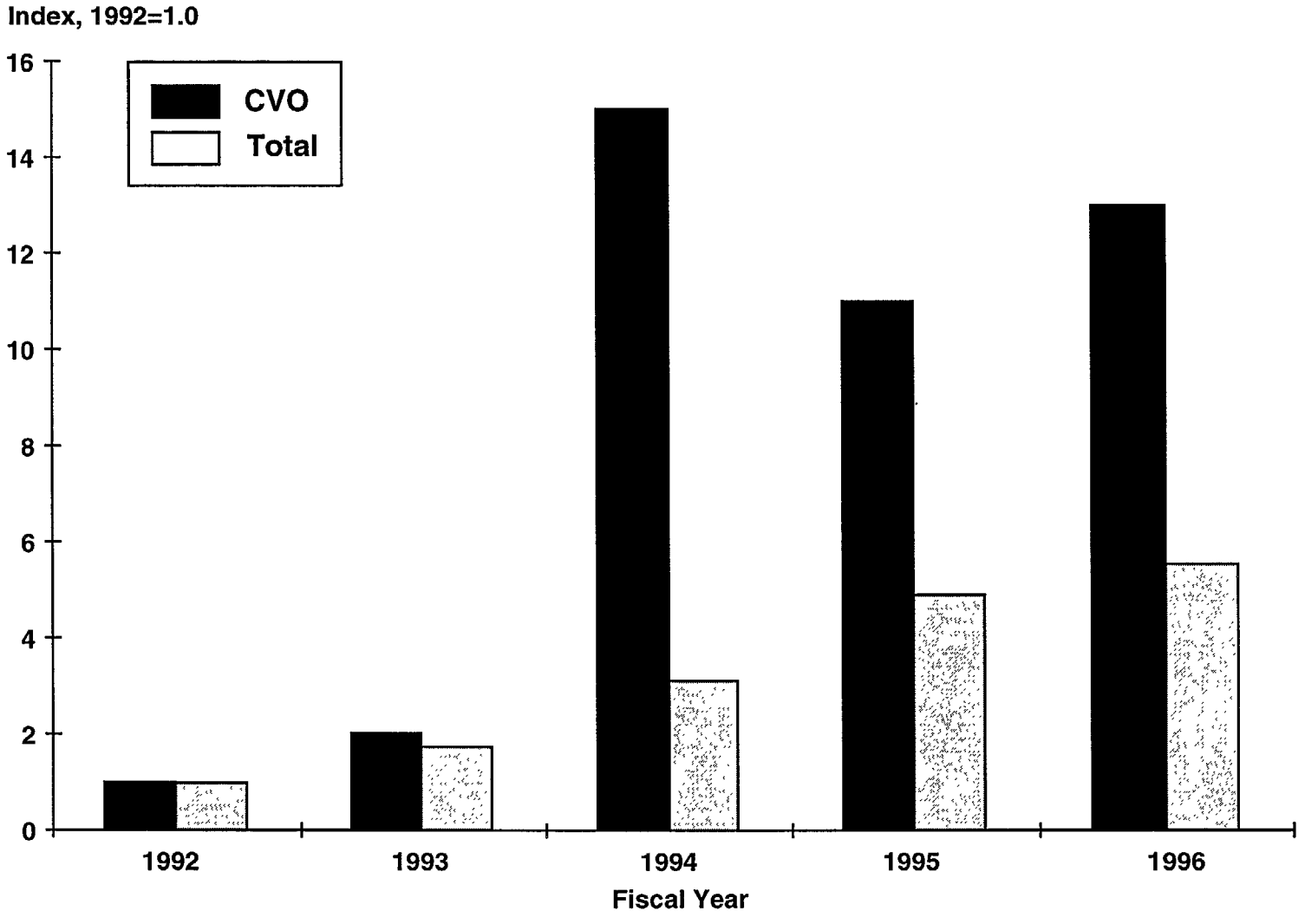
ITS/CVO spending is projected to be $21 billion over the next 15 years, with the private sector providing the majority of the investment.

ITS America has estimated that ITS expenditures between 1997 and 2011 will total $200 billion in 1992 dollars, which would make ITS deployment one of the largest transportation programs in history.[1] In comparison, the construction of the Interstate Highway Systems cost $130 billion over a 35-year period.

It is estimated that CVO would account for $21 billion, or approximately 10 percent of this total. Over the long-term, the size of the CVO market is projected to be roughly equal to that of ATMS, although smaller than the markets for ATIS, AVCSS, and AHS.[2]

It is assumed that the private sector will account for the vast majority of ITS/CVO spending. ITS America projected that manufacturers, service providers, and other vendors will provide more than half of ITS/CVO investment over the next 15 years, while end users such as motor carriers provide an additional 40 percent. It should be noted, however, that the private sector's ITS expenditures to date have been 80 percent below the ITS America projections.

Federal Funding for ITS Operational Tests



Source: U.S. DOT, Joint Program Office for ITS; Cambridge Systematics, Inc. estimates for 1996.

Federal Funding

The Federal government is a catalyst for ITS/CVO deployment.

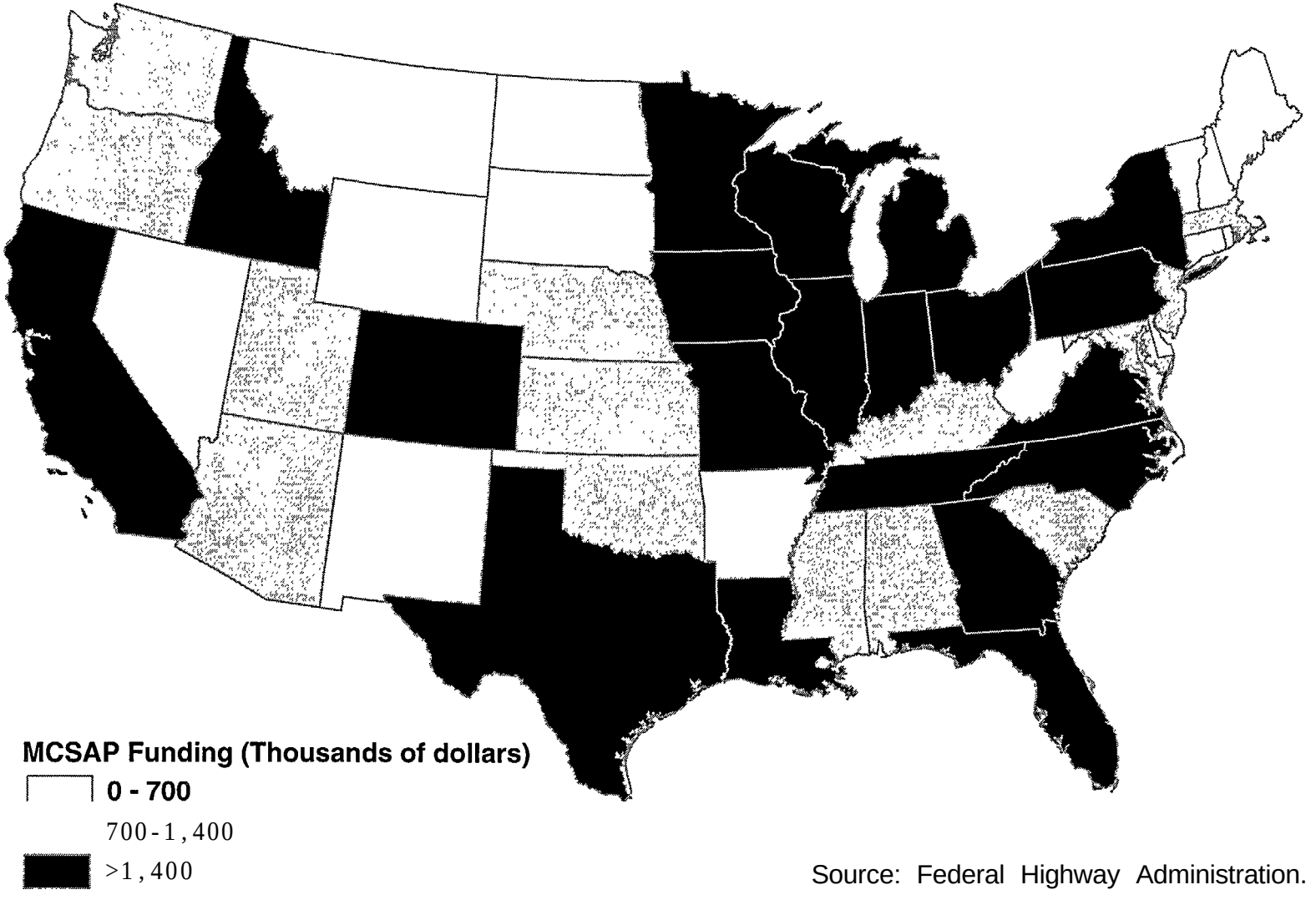
The Federal government is a catalyst for ITS/CVO deployment. The Federal government is the primary source of funding for research, development, and capital costs. Each year, the Federal governments spends upwards of $30 million on the ITS/CVO program. The major Federal funding sources include:

- The overall ITS budget, which is overseen by the JPO;
- Congressional earmarks for specific projects;
- The general operating expenditures of the FHWA Office for Motor Carriers;
- The Motor Carrier Safety Assistance Program (MCSAP); and
- The Federal-aid highway programs financed by the Highway Trust Fund.

Federal support for ITS/CVO research and testing has increased dramatically in recent years. Federal operational test funding increased from $1 million in 1992 to an average of $13 million per year from 1994 to 1996. This growth rate significantly outstrips the growth of research and development funding for ATMS, ATIS, and other ITS market areas. This growth reflects the following factors:

- Growing recognition of the magnitude of the problems facing CVO, as well as the opportunities provided by ITS;
- The success of early operational tests and research projects, which has indicated that ITS/CVO are better poised for deployment than other ITS market areas; and
- The ambitious deployment targets set by the OMC and the JPO, particularly with regard to the CVISN.

MCSAP Funding by State, Fiscal Year 1994



Source: Federal Highway Administration.

Federal Funding (continued)

The Motor Carrier Safety Assistance Program (MCSAP) is a key funding source for the deployment of ITS/CVO safety assurance systems.

Although the ITS budget is a critical source of funding, the ITS/CVO program eventually must become integrated with other Federal funding programs. The need for integration is driven not only by the intense competition among ITS market areas for a limited funding pool, but also by the value of exposing a wide range of Federal personnel, offices, and programs to ITS/CVO.

In particular, the Motor Carrier Safety Assistance Program (MCSAP) is a key source of funding for the deployment of ITS/CVO safety assurance systems. Through this program, the FHWA provides grants to the states to assist with the following activities:

- Enforcement of commercial vehicle size and weight limits at locations other than fixed sites, at sites with steep grades or mountainous terrain where a vehicle's weight may affect its operation significantly, or at seaports where intermodal containers enter and exit the United States;
- Detection of the unlawful presence of a controlled substance in the commercial vehicle or on the person of any occupant of a commercial vehicle; and
- Enforcement of state traffic laws and regulations designed to promote safe operation of commercial vehicles.

Federal funding for the MCSAP totals about $80 million per year. The states are required to provide a 20 percent matching contribution.

Potential Federal-Aid Sources of ITS/CVO Funding

Funding Program	Eligible Uses
National Highway System (NHS)	• Operational improvements for segments of the NHS • Highway safety improvements for segments of the NHS • Transportation planning • Startup costs for traffic management and control
Surface Transportation Program (STP)	• Operational improvements on Federal-aid highways and bridges • Highway safety improvements and programs . Highway research, development, and technology transfer • Capital and operating costs for traffic monitoring, management, and control facilities and programs • Surface transportation planning
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	• Transportation activities in an approved State Implementation Plan (SIP) • Capital and operating costs for traffic monitoring, management, and control facilities and programs
Metropolitan Planning **State Planning and Research (SPR)**	• MPO planning activities, including data collection and analysis • Planning for future highway programs, including data collection and analysis • Studies of the economy, safety, convenience, regulation, and taxation of highway usage • Research, development, and technology transfer activities
Research and Technology Program	• Studies of size and weigh standards, including the feasibility of uniform state regulations • Studies to identify and measure factors related to economic, social, and environmental impacts of highway projects
Applied Research and Technology Program	• Technologies to increase the efficiency and productivity of vehicular travel • Technologies to increase the safety and accessibility of vehicular transportation systems
FHWA Highway Safety (402) Program	• Data collection and analysis • Developing technical guides and materials for state and local highway agencies • Equipment for inventorying, monitoring, and testing • Providing technical highway safety training

Federal Funding (continued)

Federal-aid highway programs will become a more'important source of funding for ITS/CVO planning, deployment, and operations.

Increasingly, the **ITS/CVO** program will turn to Federal-aid highway programs as a source of funding for planning, deployment, and operations. These sources are particularly important for the ITS/CVO services that are focused on traffic management, such as commercial vehicle traveler information systems and hazardous materials incident response services.

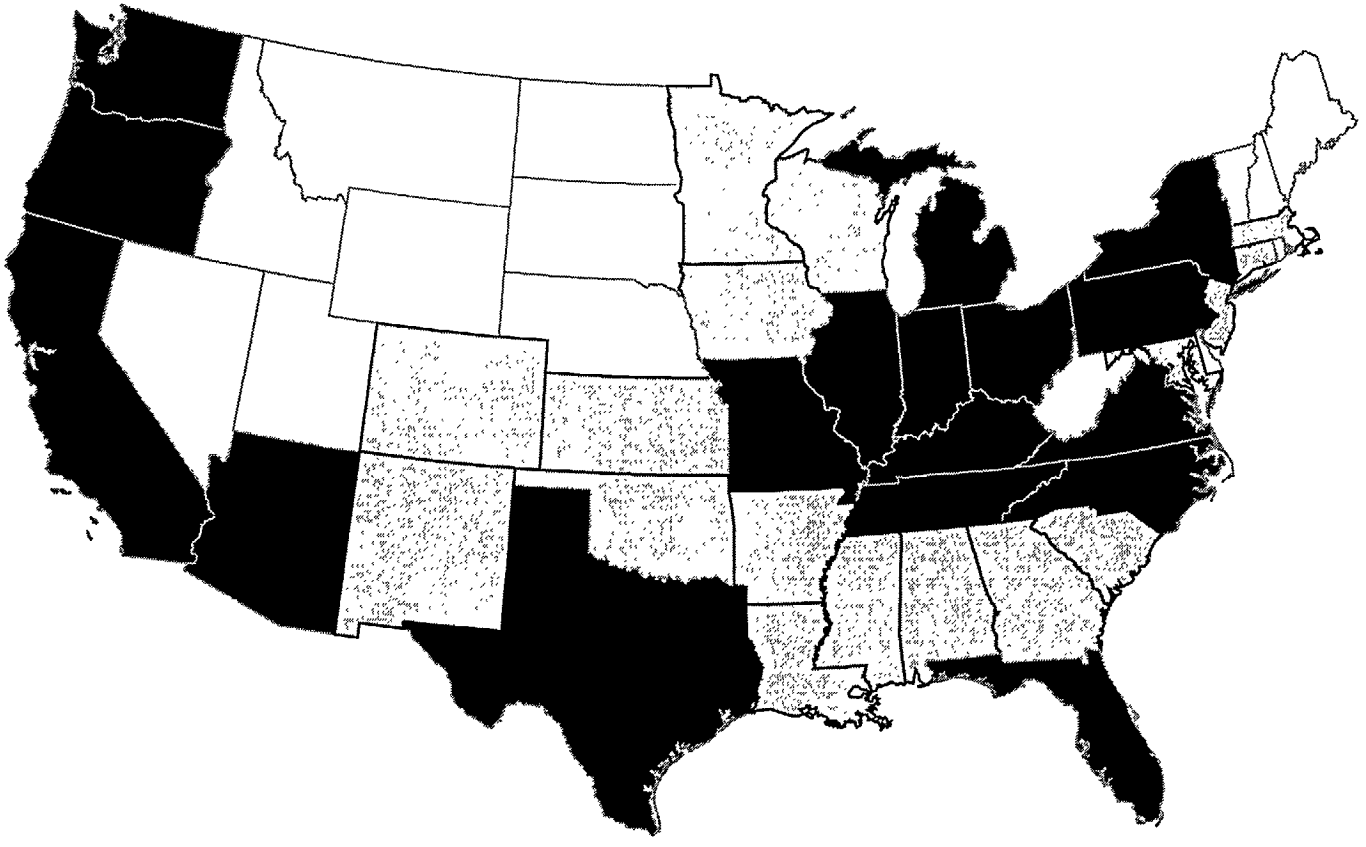
ITS/CVO services may be eligible for grants from several Federal-aid programs, including the following:

- **The Surface Transportation Program** (STP), which can fund a wide range of operational improvements, highway safety programs, and planning activities. These funds may cover capital and operating costs for traffic management facilities and programs. They are allocated largely at the discretion of each state.

- **The National Highway System** (NHS), which can fund operational and highway safety improvements on segments of the 161,108-mile NHS network. Operational improvements include traffic surveillance and control equipment, motorist information systems, and incident management programs.

- **The Congestion Mitigation and Air Quality Improvement** (CMAQ) program, which can fund transportation activities that are likely to improve air quality. **CVO** traffic management activities, particularly in urban areas, would qualify for this funding.

Total State Highway User Taxes Paid by Medium and Large Trucks, 1992



Total Trucking Revenues (Thousands of dollars)

- 0 - 95,000
- 95,000 - 200,000
- > 200,000

Source: The ATA Foundation.

State and Local Funding

The successful long-term deployment of the ITS/CVO program depends on the availability of state funding for operations and maintenance.

The successful long-term deployment of the ITS/CVO program depends on the availability of state and local funding. State and local governments are the primary sources of operations and maintenance funding. However, relatively few state governments – and even fewer local governments – have dedicated funding sources for ITS/CVO projects.

The potential for increased state funding for ITS/CVO projects is strong. The states collect the majority of trucking-related revenue. In fiscal year 1993, the states collected nearly $12 billion in revenue from motor carriers in the form of motor fuel taxes, registration fees, and other levies (excluding tolls). In comparison, the Federal government collected $8 billion in highway user fees from trucks in 1992.

Although trucks represent a relatively small share of total vehicle traffic, they account for a large share of highway revenue. Trucks represent at least 30 percent of highway revenue in 19 states, with Indiana the highest at 45 percent.

In addition, toll authorities that operate bridges, tunnels, and turnpike authorities can provide funding for the planning and deployment of ITS/CVO programs for their facilities.

Devolution Strategies

- Provide step-down Federal grants
- Build public sector constituency for ITS/CVO
- Increase freight community involvement in transportation planning
- Form public/private partnerships

State and Local Funding (continued)

The ITS/CVO program will not rely exclusively on Federal money, but will use Federal investment as a catalyst. Over the long-term, funding responsibilities will shift to the states and to the private sector.

The ITS/CVO program will not rely exclusively on Federal money, but will use Federal investment as a catalyst to support research and development, operational tests, and startup costs. Over the long-term, funding responsibilities will shift to the states and to the private sector.

The devolution of funding responsibility from the Federal governments to the states will require the following actions:

- **Provide step-down grants.** Where possible, Federal ITS/CVO funding will be provided to the states in the form of "step-down" grants, in which the Federal share of the total project costs decreases each year. In this manner, the Federal government can provide an incentive for a state to begin deployment of ITS/CVO services. Once the benefits of the service are evident, the state should be willing to bear more of the costs.
- **Build a constituency among public sector decision-makers.** The ITS/CVO program will seek ways to build support among key decision-makers so that it can compete more effectively for Federal-aid highway funds, as well as for state and local general operating budgets. Through the mainstreaming initiative, the ITS/CVO program will develop business plans and ongoing forums at the state, regional, and national levels. Over time, efforts will be undertaken to integrate ITS/CVO projects and plans into the state and metropolitan transportation improvement plans and management systems. Outreach and education will be a critical element of this effort.
- **Increase freight community involvement in planning activities.** In addition, steps will be taken to increase the involvement of the motor carriers and other freight community stakeholders in state and metropolitan planning. The ISTEA greatly expanded the role of the MPO in freight planning, but surveys indicate that freight industry input into the MPO planning process is limited. Industry participation is important to ensure that the planning and funding decisions made by MPOs reflect the needs of the trucking and bus industries.

Public/Private Investment Roadblock

Private Sector Funding

ITS/CVO deployment cannot succeed without significant private sector investment. To encourage this private sector investment, the public sector must commit to deployment of the core infrastructure, increase awareness about ITS/CVO, and develop models for public/private contracting.

ITS/CVO deployment cannot succeed without significant private sector investment. As noted, ITS America has estimated that the private sector – including vehicle and equipment manufacturers, service providers, and individual motor carriers – will account for over 90 percent of future ITS/CVO investment. This proportion is substantially larger than the 25 percent share provided by the private sector to date.

The private sector is reluctant to commit funds to ITS/CVO without guarantees that the public sector will invest in the necessary infrastructure. At the same time, the public sector is hesitant to deploy the infrastructure without assurance of private sector participation. In addition, a long-standing regulatory relationship between public agencies and the motor carriers complicates the development of stable partnerships. To encourage the private sector investment that is its future lifeline, the national ITS/CVO program will undertake the following initiatives:

- **Commit to deployment of the core CVO infrastructure.** The FHWA will remain steadfast in its commitment to deploy the CVISN and its key clearinghouses and information systems nationwide by 2005. Progress in this area will encourage private sector investment and development of other applications.
- **Increase private sector awareness and support for ITS/CVO,** The national, regional, and state ITS/CVO forums will continue to encourage participation from motor carriers and other private businesses. The regional "champions" and FHWA staff will continue to conduct outreach activities oriented toward the private sector.
- **Seek private sector expertise.** The ITS/CVO program will explore areas in which the private sector can bring expertise as well as additional investment dollars. Private sector leadership is particularly appropriate in areas where most of the benefit accrues to private businesses, as well as in areas where the risk is high.
- **Develop models for public/private partnerships.** Public agencies often lack guidelines in evaluating proposals for partnerships with the private sector. In addition, regulatory and statutory barriers to contracting with the private sector must be eliminated.